Instructions

1. This Final Report must be submitted and approved by OMAFRA to receive your final payment.
2. Verify you have the proper Final Report for your project. This Final Report is for:

   `Plant Health: Applied Research, Pilot Projects and Demonstrations (Organizations) [Category Code: PHAR-OR-D]`
3. Required fields are marked with an asterisk (*).

Purpose

The purpose of this Final Report is to identify the results and impact of project activities completed, as well as client satisfaction, related to Canadian Agricultural Partnership cost-share funding for Organizations. Responses will not impact your final claim; however, to receive funding under the Canadian Agricultural Partnership, this Final Report must be completed.

A. Contact & Project Details

Name of Organization (As named on the signed contract) *

Sault Ste. Marie Innovation Centre

Project Number *

CAP-PHAR-OR-D-000015

Your project number should have 6 digits after the Category Code. If your project number is less than 6 digits, please add 0's to make it 6 digits.
i.e. CAP-PHAR-OR-D-001234

Your Name *

David Thompson

Primary Project Contact Name (If different than your name)

B. Project Information

1. What was the focus of this project? *

- [ ] Emergency management
- [ ] Pest management
- [x] Plant health/disease management
- [ ] Biosecurity

2. What type of project did you complete? *

- [x] **Applied research project** [1]
- [ ] **Validation study/proof of concept** [2]
- [ ] **Pilot project** [3]
- [ ] **Demonstration project** [4]

Notes

1. Original investigation undertaken in order to acquire new knowledge, directed primarily towards a specific practical aim or objective.
2. Active R&D is initiated beyond fundamental and applied research. Activities include analytical studies and laboratory studies to physically validate the analytical predictions of separate elements of the technology and technological products and/or processes are tested to establish that they will work.
3. A pilot project is considered to be a project undertaken after the lab or theoretical research is done and a commercial application is envisioned. A pilot project is the step between bench research and full scale commercial application and tests on a scale that might not be commercially viable but would allow for testing under close to real world conditions. It forms part of the 'scaling-up' process and allows verification that the science still works outside the lab.
4. Demonstration projects demonstrate and/or validate at a real world scale, new technologies, concepts, business processes, marketing approaches, or systems, in order to demonstrate, test, and/or assess the technological and economic feasibility of innovative solutions. Demonstration projects can also be one-time event-based activities that extend knowledge gained from research and/or demonstrate a technology. They do not result in research data since they are not necessarily conducted with scientific rigor.

3. What activities did you complete for this project? *

Alternative Legumes Trials - Two sites were established in Algoma and Thunder Bay.
Managing weed pressure in Galega - Two sites were established in Algoma and Thunder Bay
Cross-seeding forages - Three sites were monitored in 2018/19, that were established in 2016/17. Measurements were taken (soil samples, forage samples, plant counts) to assess success at all locations. Three field days (one virtual in 2020) were completed in Algoma and Thunder Bay. Results were shared through RAIN research notes and through Lakehead University Ag Research Station Annual Reports.

C. Project Partner(s)

4. Who were your partners on this project? *

- ( ) **The project partners are listed below**
- (•) **There were no partners on this project (Skip to Question 5)**

This question is continued on page 3

PARTNER 1

Name | Cash Contribution ($) | In-kind Contribution ($)

Type:

- Business
- University / College
- Other Government
- Organization
- Innovation Centre
- Other

PARTNER 2

Name | Cash Contribution ($) | In-kind Contribution ($)

Type:

- Business
- University / College
- Other Government
- Organization
- Innovation Centre
- Other

PARTNER 3

Name | Cash Contribution ($) | In-kind Contribution ($)

Type:

- Business
- University / College
- Other Government
- Organization
- Innovation Centre
- Other

PARTNER 4

Name | Cash Contribution ($) | In-kind Contribution ($)

This question is continued on page 4

Type:

- ○ Business
- ○ University / College
- ○ Other Government
- ○ Organization
- ○ Innovation Centre
- ○ Other

5. Were there additional partners on this project? * (Not included on the project application)

- ○ The additional project partners are listed below
- ◉ There were no additional partners on this project (Skip to Question 6)

PARTNER 5

Name | Cash Contribution ($) | In-kind Contribution ($)

Type:

- ○ Business
- ○ University / College
- ○ Other Government
- ○ Organization
- ○ Innovation Centre
- ○ Other

PARTNER 6

Name | Cash Contribution ($) | In-kind Contribution ($)

Type:

- ○ Business
- ○ University / College
- ○ Other Government
- ○ Organization
- ○ Innovation Centre
- ○ Other

PARTNER 7

Name | Cash Contribution ($) | In-kind Contribution ($)

This question is continued on page 5

Type:

- ○ Business
- ○ University / College
- ○ Other Government
- ○ Organization
- ○ Innovation Centre
- ○ Other

6. Who was the principle investigator/lead for this project? *

Name of Principle Investigator/Lead *: David Thompson

Employer of Principle Investigator/Lead *: Sault Ste. Marie Innovation Centre

Type: *

- ○ College faculty
- ○ Organization
- ◉ Research / innovation centre researcher
- ○ Consultant
- ○ University faculty
- ○ Other

D. Knowledge Transfer/Creation

7. What new knowledge has been developed as a result of this project? *

On the Thunder Bay Galega weed control project, the location showed that there was significantly less weed pressure when the galega was seeded in very early spring or after pre-plant incorporation of Rival (Trifluralin) @ 3L/ha.

From the Alternative Legumes Trials, the highest yielding legumes were red clover, birdsfoot trefoil and alfalfa at both the Algoma location and in Thunder Bay.

8. Will the new knowledge be applied to benefit the agri-food sector? *

- ◉ Yes (Indicate below)
- ○ No (Skip to Question 9)

Select all that apply, and then respond to the Questions 8a, 8b, 8c, 8d and 8e as applicable. If new knowledge will not be applied through any of the below, skip to question 9.

- ☐ Product [5]
- ☑ Best practice [8]
- ☐ System [6]
- ☐ Process [9]
- ☐ Policy, program, code, guideline [7]

This question is continued on page 6

Notes

5. A new product is considered a good or service that differs significantly in their characteristics or intended uses from products previously produced and used. Examples could include equipment or software. (Provide details in question 8.a)
6. A system is a set of detailed methods, procedures, and routines created to carry out a specific activity, perform a duty, or solve a problem. (Provide details in question 8.b)
7. A policy, program, code, or guideline is a collection of actions, recommendations, practices, or methods that are interrelated and can be used by businesses or organizations to achieve an objective, goal, or solution to a problem. (Provide details in question 8.c)
8. A practice is considered agronomic or processing techniques or methods that can be applied directly by producers, processes, or other businesses. (Provide details in question 8.d)
9. A process is a new set of operations performed by equipment in which variables are monitored or controlled to produce an output. (Provide details in question 8.e)

8.a. Product (complete if applicable)

DETAILS OF APPLICATION

- ◯ Newly created product that differs significantly from existing products
- ◯ Existing product that is modified to meet different requirements
- ◯ Existing product that is tested in different situations

WHAT IS THE LIKELY TIMELINE FOR ADOPTION/USE IN THE SECTOR?

- ◯ Ready for adoption
- ◯ To be completed within 12 months
- ◯ To be completed within 1-3 years
- ◯ Not feasible for adoption
- ◯ Timeframe unknown

WAS THE PRODUCT ASSESSED UNDER RESEARCH CONDITIONS?

- ◯ Yes
- ◯ No

WAS THE PRODUCT DEVELOPED ON FARM, IN-PLANT, OR WITHIN AN OPERATION?

- ◯ Yes
- ◯ No

8.b. System (complete if applicable)

DETAILS OF APPLICATION

- ◯ Newly created system that differs significantly from existing system
- ◯ Existing system that is modified to meet different requirements
- ◯ Existing system that is tested in different situations

WHAT IS THE LIKELY TIMELINE FOR ADOPTION/USE IN THE SECTOR?

- ◯ Ready for adoption
- ◯ To be completed within 12 months
- ◯ To be completed within 1-3 years
- ◯ Not feasible for adoption
- ◯ Timeframe unknown

WAS THE SYSTEM ASSESSED UNDER RESEARCH CONDITIONS?

- ◯ Yes
- ◯ No

WAS THE SYSTEM DEVELOPED ON FARM, IN-PLANT, OR WITHIN AN OPERATION?

- ◯ Yes
- ◯ No

8.c. Policy, Program, Code, Guideline (complete if applicable)

DETAILS OF APPLICATION

- ◯ A new code, guideline, framework, plan, or strategy
- ◯ Modification of an existing policy, program, code or guideline

WHAT IS THE LIKELY TIMELINE FOR ADOPTION/USE IN THE SECTOR?

- ◯ Ready for adoption
- ◯ To be completed within 12 months
- ◯ To be completed within 1-3 years
- ◯ Not feasible for adoption
- ◯ Timeframe unknown

8.d. Best Practice (complete if applicable)

DETAILS OF APPLICATION

- ○ Newly created best practice that differs significantly from existing best practice
- ◉ Existing best practice that is modified to meet different requirements
- ○ Existing best practice that is tested in different situations

WHAT IS THE LIKELY TIMELINE FOR ADOPTION/USE IN THE SECTOR?

- ◉ Ready for adoption
- ○ To be completed within 12 months
- ○ To be completed within 1-3 years
- ○ Not feasible for adoption
- ○ Timeframe unknown

WAS THE PRACTICE ASSESSED UNDER RESEARCH CONDITIONS?

- ◉ Yes
- ○ No

WAS THE PRACTICE DEVELOPED ON FARM, IN-PLANT, OR WITHIN AN OPERATION?

- ○ Yes
- ◉ No

8.e. Process (complete if applicable)

DETAILS OF APPLICATION

- ○ Newly created process that differs significantly from existing process
- ○ Existing process that is modified to meet different requirements
- ○ Existing process that is tested in different situations

WHAT IS THE LIKELY TIMELINE FOR ADOPTION/USE IN THE SECTOR?

- ○ Ready for adoption
- ○ To be completed within 12 months
- ○ To be completed within 1-3 years
- ○ Not feasible for adoption
- ○ Timeframe unknown

WAS THE PROCESS ASSESSED UNDER RESEARCH CONDITIONS?

○ Yes ○ No

WAS THE PROCESS DEVELOPED ON FARM, IN-PLANT, OR WITHIN AN OPERATION?

○ Yes ○ No

9. Provide more details related to the application of knowledge created and its potential adoption. *

A benefit that has been identified that will impact Ontario farmers is that the highest yielded alternative legumes over the years have been red clover, birdsfoot trefoil and alfalfa. Even though these are some of the most common legumes that producers plant it has been shown at what extent the yields produce more than others. We have also shown that galega could be a strong option, even though it did not have the highest yields it was shown to be persistent over winter. The project has demonstrated the best way to manage weed pressure with this emerging crop. We have also shown that if producers are willing to adapt to the cross-seeding method, a profit can be made.

10. Has the knowledge produced by this project been documented and/or transferred? *

◉ Yes (Indicate below) ○ No (Skip to Question 11)

Provide the number of products/resources developed or events completed in the **Count** box.

Provide the number of training participants where applicable in the **Participants** box.

	Count	Participants
Print or web-based research or technical report, reference or training tool/material, booklet, information sheet, factsheet or technical bulletin, guide, or plain language summary	11	
Article in trade magazine, other magazine, or newsletter	0	
App or web-based tool	0	
Video, DVD, or whiteboard video	0	
Social media (tweets, posts, feeds, blogs)	0	
Website	2	
Podcast	0	

This question is continued on page 10

Scientific article submitted to peer reviewed journal		
Scientific article published in peer reviewed publication		
Group in-person learning session [10]	5	150
Web-based training [11]	1	150
One-on-one [12]		
On-site [13]		
Internship [14]		
Conference/tradeshow [15]		
Peer-to-peer [16]		
Other (Specify)		

Notes

10. Training where participants attend a training institution, or other organized training opportunity with an instructor or leader (e.g. in-class, workshop, seminar).
11. Training delivered via the internet (e.g. eLearning).
12. Informal interactions/activities where participant receives one-on-one knowledge transfer, either in-person or over the phone, from an expert/trainer/professional.
13. Training that occurs at a place of business and involves more than one participant so as to be distinguished from one-on-one training (e.g. field demonstration, field tour).
14. Supervised on-the-job training assignment designed to give students the skills and knowledge required for entry into a trade/profession over a defined period.
15. Participants attend a large scale exposition off-site specifically as a knowledge transfer/training opportunity, as opposed to a sales or marketing opportunity.
16. Interactions/activities where peers learn from and with each other in both formal and informal ways.

E. Intellectual Property

11. Was any intellectual property disclosed or protection applied for as a result of this project? *

○ **Yes (Indicate below)** ◉ **No (Skip to Question 12)**

This question is continued on page 11

Intellectual Property	Disclosure	Protection (Applied)	Protection (Received)
Plant Breeders' Right	☐	☐	☐
Patent	☐	☐	☐
Copyright	☐	☐	☐
Trademark	☐	☐	☐

12. Have any licences been signed with industry for use of any new technology that was developed through this project? *

○ Yes ◉ No (Skip to Question 13)

If yes, how much licence revenue has been generated from the licence agreement in the past 12 months? $

F. Training of Highly Qualified Personnel

13. Were any highly qualified personnel trained as a result of this project? *

◉ Yes (Indicate Below) ○ No (Skip to Question 14)

Highly Qualified Personnel	Count
PhD student(s)	
Masters student(s)	
Recently graduated degree student(s)	1
Undergraduate student(s)	1

G. Other Project Impacts

14. Overall, what key achievements did your organization realize as a result of this project? *

With the project we have further developed an understanding of how farms can manage Galega in Ontario. We have demonstrated the highest yielding Northern Ontario legumes that farms can include in their grass seed mixes for establishing forage crops. Finally, we have demonstrated that cross-seeding forages is profitable, after an economical analysis was completed.

15. Will this project move your sector towards implementation of your industry's national biosecurity standards? *

- ○ Yes (Indicate Below)
- ◉ No (Skip to Question 16)
- ○ N/A (Skip to Question 16)

INDICATE THE STANDARD:

- ○ Fruit and tree nut
- ○ Grains and oilseeds
- ○ Greenhouse, nursery and floriculture
- ○ Generic plants
- ○ Potatoes
- ○ Other (Specify)

16. Which of the following Canadian Agricultural Partnership outcomes does this project contribute to and how? *

☐ **Animal and plant diseases, pests, food safety hazards, and antimicrobial use along the supply chain is anticipated, detected, mitigated, and/or reduced.**

Describe How:

This question is continued on page 13

☑ The agriculture, agri-food, and agri-products sector seizes opportunities to respond to market and public demands, including attainment of higher levels of recognized standards and Codes of Practice.

Describe How:

The project contributes to a better understanding of how forage crops in northern Ontario are to be managed to control weed pressure, maximize yields and have better quality outcomes.

17. Did you encounter any barriers to completing this project? *

◉ Yes (Indicate Below) ○ No (Skip to Question 18)

SELECT ALL BARRIERS THAT APPLY

- ☐ Approval timelines (e.g. timing of approval was different than expected)
- ☑ Priority/process change (e.g. changes in process/priorities of the organization impacted the project)
- ☑ Expertise (e.g. challenges accessing technical assistance to plan project solutions)
- ☐ Financial constraints (e.g. lack of funds or cost increases)
- ☐ Labour (e.g. insufficient labour to complete project, challenges finding qualified contractors)
- ☐ Technical (e.g. mechanical, electrical, computer systems, automation, equipment)
- ☐ Time (e.g. unable to meet time requirements, ill-timed, scheduling issues)
- ☑ Uncontrollable circumstances (e.g. dependency on outside sources not met, weather, vendors, suppliers, etc.)
- ☐ Other (Specify)

H. Service Experience

18. Indicate the extent to which you agree or disagree with the following statements. *

	1. Strongly Disagree	2. Disagree	3. Neither Agree nor Disagree	4. Agree	5. Strongly Agree
a. Once this project was approved, I received a the information needed to proceed to the next step of the project.	○	○	○	○	◉

	1. Strongly Disagree	2. Disagree	3. Neither Agree nor Disagree	4. Agree	5. Strongly Agree
b. The claim forms were easy to understand and complete.	○	○	○	○	◉
c. I was able to reach appropriate OMAFRA staff without difficulty.	○	○	○	○	◉
d. OMAFRA staff were knowledgeable.	○	○	○	○	◉
e. I received consistent information from OMAFRA staff.	○	○	○	○	◉
f. OMAFRA staff were courteous.	○	○	○	○	◉

19. Overall, how satisfied were you with the amount of time it took to get the service that you required? *

1. Very Dissatisfied	2. Dissatisfied	3. Neither Satisfied Nor Dissatisfied	4. Satisfied	5. Very Satisfied
○	○	○	○	◉

20. Overall, how satisfied were you with the service you received while implementing this project? *

1. Very Dissatisfied	2. Dissatisfied	3. Neither Satisfied Nor Dissatisfied	4. Satisfied	5. Very Satisfied
○	○	○	○	◉

21. To what extent did the availability of funding assistance influence your decision to undertake this project? *

1. Not At All	2. To a Small Extent	3. To a Moderate Extent	4. To a Great Extent
○	○	○	◉

22. Provide any other comments you would like to share about your experience related to Canadian Agricultural Partnership cost-share funding for Organizations.

I. Submission Instructions

1. The Project as described in the Agreement has been completed;
2. The Recipient is in compliance with all terms and conditions of the Agreement;
3. The Recipient has not received any overpayments by the Province or any other organization or government; and
4. No Funding has been spent on Ineligible Costs.

All information provided is to the best of my knowledge, belief and understanding, true and correct in all material aspects.

Peter Bruijns		01/15/2021
Name	Signature	Date

☑ I am a duly authorized signing officer for the Recipient.

Review your answers and email the completed Final Report to agpartnership@ontario.ca

CANADIAN AGRICULTURAL PARTNERSHIP
Innovate. Grow. Prosper.

Ontario

Canada